Part II
Exploration of Thrust Belts (1): Seismic Imaging and Traps

Seismic imaging remains the main challenge for petroleum exploration in foothills areas. Structural interpretation and subsequent kinematic and basin modelling require also to convert the time sections into the depth domain. Using two case studies in the Polish Carpathians and in the Gaspé Appalachians in Québec, part II of this volume documents the work flow and iterations between the structural and velocity models during seismic processing and depth migration of the profiles.

First described in the Canadian Rockies, frontal triangle zones are common features in many thrust belts. Although they constitute attractive targets for the exploration, they are usually poorly imaged, due to the occurrence of steep or even overturned beds, accounting for rapid vertical and lateral changes in the seismic velocities. Jardin et al. (Chapter 3) describe the results obtained during direct seismic modelling and depth migration in the frontal part of the Polish Carpathians, an area which is also covered by Chapter 20 (part IV).

Bèche et al. (Chapter 4) present the workflow, velocity model and results obtained by depth migration in the Northern Appalachians in Canada, a Paleozoic orogen where post-orogenic erosion accounts for higher average seismic velocities at the surface than in Neogene thrust belts.